[METHOD, SYSTEM AND PROGRAM PRODUCT FOR BUILDING AN AUTO- MATED DATAPATH SYSTEM GENERAT- ING TOOL]

Abstract

A method, system and program product for building an auto- mated bit-sliced datapath system generating tool so design can be performed at a higher level, and automated generation of the synthesizable HDL representation can be accomplished are dis- closed. A method defines datapath system characteristics, defines core/pin rules, and then constructs class-type inference rules that can be used for automatically generating the datapath system. An "orthogonal bundling" technique is used that groups pin by a class, and also by a channel identifier. The class-type inference rule corresponding to each class uses of the following factors to infer appropriate wiring: 1) number and type of pins in the class created by the instantiation of cores by the user; 2) attribute defi- nitions on pins set by library core/pin rules; 3) user selection of "global attributes"; 4) user definition of channel bit order ("link

orders") to imply the order of connection between stages; and 5) user-defined attributes set on pin classes.